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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

ORIGINAL

In the Matter of

Amendment of the Commission's
Rules to Establish New Personal
Communications Services

GEN Docket No. 90-314
RM-7140, RM-7175, RM-7618

COMMENTS ON THE PETITIONS FOR FURTHER RECONSIDERATION

Northern Telecom Inc. ("Northern Telecom") hereby comments on the petitions for further reconsideration filed with respect to the Commission decision establishing service rules for Personal Communications Services ("PCS").^{1/} Northern Telecom is the leading global supplier, in 90 countries, of digital telecommunication switching systems, providing products and services to the telephone operating companies, governments, universities and other institutions worldwide. The company employs more than 22,000 people in the U.S. in manufacturing plants, research and development centers, and in marketing, sales and service offices across the country.

In February 1991, Northern Telecom established a wireless systems organization that has as its objective the development of new wireless technologies and services to meet marketplace demands throughout the world. In recognition of the

1/ Amendment of the Commission's Rules to Establish
Personal Communications Services, GEN Docket No. 90-314, FCC 94-144, released June 13, 1994 ("PCS Reconsideration Order").
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growing importance of wireless communications, this group has been made comparable in organizational stature to the company's historical public and private network product line groups.

Northern Telecom has been a strong proponent of PCS, and an active participant in the numerous fora addressing its development. Northern Telecom has closely followed the PCS proceedings at the Commission, and earlier testified at the FCC's en banc hearing on PCS. Northern Telecom has conducted several technical and market trials pursuant to experimental licenses issued by the Commission. Northern Telecom was one of the early members and strong supporters of industry efforts to foster the development of PCS, including PCIA, WINForum and UTAM. In addition, Northern Telecom continues to participate actively in the relevant standards settings groups addressing PCS technical standards. As these actions make clear, Northern Telecom has exhibited a strong interest in the success of PCS.

The rapid deployment of both licensed and unlicensed PCS should provide numerous public interest benefits. Individuals will obtain access to advanced wireless communications providing enhanced mobility at affordable rates -- the ability to communicate anything, anytime, anywhere. Likewise, the enhanced mobility made possible by PCS will increase the efficiency and productivity of businesses, which will increase the competitiveness of American companies in the global economy. Moreover, numerous jobs will be created in both the service and manufacturing sector as billions of dollars are invested in this new portion of the wireless infrastructure. In addition, Congress estimates that billions of dollars will be

provided to the government to reduce our nation's budget deficit when the Commission begins to use an auction process to award PCS licenses. The conservative nature of these forecasts have been borne out by the results of the initial narrowband PCS auctions.

In response to the Commission's initial PCS decision,^{2/} Northern Telecom had filed a petition for reconsideration seeking an increase in the maximum power for licensed PCS base stations to at least 1000 watts ERP, and modifications to the unlicensed PCS rules to incorporate several provisions of the WINForum Spectrum Etiquette that had not been reflected in the rules. In the PCS Reconsideration Decision, the Commission adopted the changes recommended by Northern Telecom. Northern Telecom believes that those steps will help ensure the successful and rapid deployment of PCS, which will lead to the advances in the public interest enumerated above.

Northern Telecom is concerned, however, that some of the petitions for further reconsideration might delay the introduction of PCS or reduce the benefits that will be made possible by PCS. Northern Telecom believes that the Commission properly weighed the competing interests and struck an appropriate balance in the changes it made in the PCS Reconsideration Decision. While some further clarification of the PCS Rules may be appropriate, Northern Telecom urges the Commission to reject the requests in the petitions for further reconsideration that seek substantive modification of the careful balance struck by the Commission in fashioning the PCS Rules.

^{2/} Amendment of the Commission's Rules to Establish Personal Communications Services, 9 FCC Rcd 1337 (1994).

In particular, Northern Telecom opposes the request of the Association for Maximum Service Television, Inc. ("MSTV") seeking additional protection for broadcast auxiliary and electronic news gathering operations in nearby frequencies, including the possibility of imposition of a "guard band" or a 2 kilometer spatial separation requirement.^{3/}

The MSTV proposal would have a devastating impact on the C-block licensees (which have been reserved for Designated Entities). The suggestion of MSTV to create a "guard band" by reversing the bands used for base station-to-handset and handset-to-base station transmissions is not practical. First, such a change runs counter to proper radio system design, which dictates that the lower power transmitter (the handsets) operate in the lower portion of the spectrum to take advantage of the better propagation characteristics.

In addition, such a change in the frequency plan would necessitate a distinct set of handsets and base stations to be used with the C-block systems. The required reengineering of the handsets and base stations, particularly at this late stage in the development of PCS equipment, would slow the availability of the C-block equipment and increase its cost. The handsets would also likely be significantly more complex (and hence expensive) because they would be operating in close proximity to the frequencies used by the significantly higher powered base-stations of the other PCS licensees, and so would have to incorporate much more sophisticated filtering capabilities.

^{3/} Comments of MSTV, July 25, 1994 at pp. 6-8 and Attachment.

Moreover, because the C-block equipment would be distinct from other PCS equipment, the expected scale economies from widespread deployment of PCS would not materialize for the C-block systems, thus increasing the equipment costs. Finally, the need for distinctive C-block handsets would also lessen the attractiveness of those systems to customers, since subscribers would not have the benefit of being able readily to change service providers to take advantage of better quality or prices; in order to change to a new PCS provider, the customer would have to purchase an entirely new handset. In sum, the "guard band" proposal of MSTV would effectively preclude successful use of the C-block, which would be contrary to the public interest.

Northern Telecom also believes that the alternative suggestion of a minimum 2 kilometer separation between a PCS base station and a Broadcast Auxiliary receive site would present problems. Such restrictions on the location of PCS base stations could lead to severe "dead spots" where PCS services were unavailable. In addition, such a solution is impractical to the extent that the electronic news gathering activities of primary importance to MSTV presumably include mobile receivers, rendering such geographic coordination difficult.

Northern Telecom is not convinced that any further rule changes are necessary to meet the concerns of MSTV. As Northern Telecom indicated in its previously filed petition for reconsideration seeking an increase in the base station power limits, interference to point-to-point microwave links is reduced somewhat by the increase in power because of the reduction in the number of required PCS base stations to provide service

throughout the licensee's operating territory. In addition, the use of advanced antenna systems (incorporating greater directionality) made possible by the higher power limits may also alleviate some of MSTV's potential concerns.^{4/}

Northern Telecom believes that the current rules limiting out of band emissions will provide adequate protection.^{5/} Moreover, to the extent that the broadcast auxiliary services anticipate any additional potential interference problems, they can compensate by deploying more sophisticated equipment or filtering devices. Particularly because the MSTV licensees have obtained their spectrum for free (as opposed to PCS providers who will be acquiring their licenses through FCC conducted auctions), it is only fair that the broadcasters should shoulder some of the burden of "sharing" the spectrum with their PCS licensee neighbors. For all of these reasons, Northern Telecom urges the Commission to reject MSTV's petition for further reconsideration.

Northern Telecom does agree with one of the requests in the petitions for further reconsideration. ArrayComm, Inc. and its subsidiary Spatial Communications, Inc. ("ArrayComm")

^{4/} Northern Telecom has developed such an antenna system - Northern Telecom's Smart Antenna Module ("SAM"). SAM is an antenna system that utilizes narrowbeam antennas rather than an omnidirectional antenna. SAM is described in greater detail in Attachment 1 to Northern Telecom's Petition for Reconsideration in this proceeding, filed December 8, 1993.

^{5/} MSTV may also be exaggerating the problem by postulating a worst-case scenario where the Electronic News Gathering ("ENG") antenna is directly aligned with a PCS base station transmitter. It may be possible to avoid such situations by moving the ENG truck a short distance.

requested that the Commission clarify that the "100 watts per channel" limitation set forth in the PCS Rules apply to:

individual base station transmitters without regard to the number of such transmitters employed at each base station, the station element or elements to which each transmitter is connected, or the channels in which each transmitter is allowed to transmit.^{6/}

Northern Telecom believes that such an interpretation is consistent with the Commission's intent and purpose in adopting rules that will accommodate advanced antenna systems such as ArrayComm's (and Northern Telecom's Smart Antenna Module). Thus, Northern Telecom supports ArrayComm's request for clarification.^{7/}

CONCLUSION

Northern Telecom believes that the Commission did a laudable job of balancing the differing interests and concerns when it modified its PCS Rules in response to the petitions for reconsideration. Northern Telecom does not believe that any further "tinkering" is necessary. Indeed, such changes could be counterproductive, particularly if they serve to hamper PCS or delay the PCS auctions. Thus, Northern Telecom urges the

^{6/} ArrayComm Petition for Further Reconsideration filed July 25, 1994 at pp. 6-7.

^{7/} With respect to ArrayComm's request that the Commission modify the power limitations adopted in the PCS Reconsideration Decision, Northern Telecom believes that the current rule is adequate. At any rate, Northern Telecom is concerned because while the ArrayComm proposal does ultimately lead to an acceptable power level, the ArrayComm proposed formulation of new power limits is unduly complicated and likely to lead to confusion.

Commission to reject the MSTV petition for further
reconsideration.

Respectfully Submitted,

A handwritten signature in dark ink, appearing to read "Stephen L. Goodman", is written over a horizontal line.

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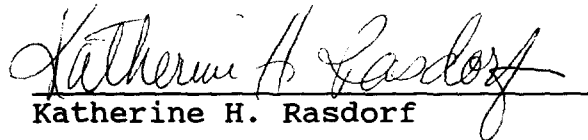
August 30, 1994

CERTIFICATE OF SERVICE

I, Katherine H. Rasdorf hereby certify that on the 30th day of August, 1994, a true copy of the foregoing Comments on the Petitions for Further Reconsideration was mailed, postage prepaid, to:

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